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10/057,699	01/24/2002	Michio Matsuura	1109.66122	9076

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EXAMINER

DINH, TAN X

ART UNIT	PAPER NUMBER
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2653

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DATE MAILED: 03/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/057,699

Applicant(s)

MATSUURA, MICHIO

Examiner

TAN X. DINH

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☐ Claim(s) \_\_\_\_ is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-13 and 18 is/are rejected.
- 7) ☒ Claim(s) 14-17 and 19 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)            |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2</u> . | 6) <input type="checkbox"/> Other: ____  |

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1) Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

2) The I.D.S filed 1/24/2002 has been considered by the Examiner. However, the Japan and/or foreign document(s), if they have not been written in English, are considered to the extent that could be understood from the English Abstract and the drawings.

Form PTO-1449 or PTO/SB/08 is(are) attached herein.

3) The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The following title is suggested.

OPTICAL RECORDING MEDIUM HAVING PITS DISPOSED IN MATRIX  
LAYOUT AND APPARATUS FOR PROCESSING THEREOF.

4) The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the selected pit being placed at one of the offset positions ( claim 4 ), each of the reference pit being placed at a second reference point ( claim 8 ) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

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A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

5) Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase " the selected pit carrying information indicated by a position of the selected pit relative to the first reference point " ( claim 1, lines 11-13 ) is unclear. The specification did not specific teach or describe this feature, therefore, the limitation as claimed cannot be understood.

Claim(s) 2-10 incorporate the indefiniteness of claim(s) \_\_ by virtue of their dependency thereon.

6) The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

7) (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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8) Claims 1-7, as understood by the meaning of 112, 2<sup>nd</sup> as indicated above, is rejected under 35 U.S.C. 102(b) as being anticipated by MIYAMOTO et al ( 5,805,565 ).

MIYAMOTO et al discloses an optical storage medium as claimed in claim 1, comprising:

A plurality of track ( Fig.6, tracks 84, 85 );

A plurality of information pits arranged in the tracks and designed to produce reflection light upon irradiation of a light beam ( Fig.6, pits 82 );

wherein the information pits are disposed in a matrix layout so that the reflection light includes at least four diffracted rays ( Fig.6, the pit 82 are arranged in matrix ) and;

wherein a selected pit of the information pits is offset from a first reference point in a track direction and a tracking direction ( Fig.6, the pits are offset in track direction ( horizontal direction ) and tracking direction ( vertical direction ) ).

As to claim 2, MIYAMOTO et al shows the pits are disposed on a first line or second line slant with respect to the track direction and the tracking direction ( see figure 6, the line connected pits in section 833 slant with respect to the track direction and the tracking direction ).

As to claim 3, MIYAMOTO et al shows first line and second line are perpendicular to each other ( Fig.6, the lines connecting pits ).

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As to claim 4, MIYAMOTO et al shows a plurality of offset position are around a reference point and a select pit being placed at one of the offset position ( Fig.6, pit 82 in section 833 is selected pit ).

As to claim 5, MIYAMOTO et al shows the tracks are divided into plurality of sectors each having address region and data region ( Fig.6, address region 83 and data region 81 ) and the information pits being arranged in the address region ( Fig.6, pits 82 is arranged in the address region 833 ).

As to claim 6, MIYAMOTO et al shows the data-recording region is formed with a land and a groove, which are juxtaposed in the tracking direction, data being written to at least one of the land and the groove ( Fig.6, land 85, groove 84, the data being written on both land 85 and groove 84 ).

As to claim 7, the feature of reference pit in sector reference data region is inherent in MIYAMOTO et al's optical storage medium for tracking control and generating clock signal.

As to claim 10, MIYAMOTO et al shows the information pits are divided into a first group and a second group, which are juxtaposed in the track direction, the information pits of the first group being staggered with the information pits of the second group in the tracking direction ( Fig.6, the group of pits in region 833 and 834 are staggered in the tracking direction ).

9) Claims *11 and 12* are rejected under 35 U.S.C. 102(b) as

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being anticipated by APPLICANT's PRIOR ART ( figures 20 and 21 ).

The APPLICANT's PRIOR ART ( figures 20 and 21 ) discloses a an optical information processing apparatus comprising: an optical storage medium provided with a plurality of pits to produce reflection light upon irradiation of light ( figure 20 shows an optical storage medium with land and groove tracks );

a light source that irradiates the optical storage medium and an optical detector that detects the reflection light ( the light source and optical detector are inherent in every optical recording device );

wherein the reflection light includes four interference regions separated in a track direction and a tracking direction, the optical detector being provided with four detection areas that detect light in the interference regions ( figure 21, four interference reflecting beams  $R_e$ ,  $I_e$ ,  $I_f$  and  $R_f$  are reflected to four detection areas of the photo-detector during reproducing process ); and

wherein a relative position of each pit with respect to a reference point is discerned based on intensity of light detected by the detection areas ( this feature is inherent in any photo-detector having four detection areas. As shown in FIG. 21, the zero-order ray  $R_0$  interferes with the first-order rays  $R_e$  and  $R_f$ , thereby producing two interference rays  $I_e$  and  $I_f$  in the tracking direction. When the tracking operation is not properly performed, the two interference rays  $I_e$  and  $I_f$  will exhibit a difference in

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intensity of light, the tracking control thereafter, is performed based on the intensity of light detected by four detection areas ).

As to claim 12, the signal processor for discerning the relative position of each pit and produce digital information of each pit is inherent in prior art figures 20 and 21 because the purpose of the prior art is reproduced the digital information of each recorded pit on the optical storage medium.

10) The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

11) Claims *13 and 18* are rejected under 35 U.S.C. 103(a) as being unpatentable over APPLICANT's PRIOR ART ( figures 20 and 21 ).

The APPLICANT's PRIOR ART ( figures 20 and 21 ) discloses all the subject matter claimed as in claim 13, except to specifically show that the optical detector is provide with non-detection area surrounded by four detection areas. It would have been obvious to use provide a non-detection area surrounded by four detection areas in the prior art of figures 20 and 21



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because: The optical detector of figures 20 and 21 having four detection areas for receiving four interference beams Re, Ie, If and Rf. During detection process, the four interference beams will falling not only on four detection areas but also on some non-detection areas as well which leads to errors occur on the photo-detector, by arranging a non-detection area at the center of four detection areas the optical detector can mostly receive the four interference rays, but not much of the non-interference light ( which corresponding to the central level portion of the intensity distribution patterns ) and it is possible to accurately detect the difference in intensity of light among the four interference beams. For that reasons, someone within the level of skill in the art would modifies the optical detector of figures 20 and 21 by provide a non-detection area at the center of four detection areas for eliminating the error during detection process.

As to claim 18, it would have been obvious to use a coordinate conversion in the prior art of figures 20 and 21 since this method has been widely used in photo-detector for reducing the amount of data necessary to specify all the points of the predetermined pit-shift destinations.

12) Claims 8-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of

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the base claim and any intervening claims.

13) Claims *14-17 and 19* are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14) The prior art made of record and not relied upon is considered pertinent to applicant's disclosure ( See form PTO-892 attached herein ).

Applicant is reminded that in amending in response to a rejection of claims ( if the rejection involves with any applicable arts ), the patentable novelty must be clearly shown in view of the state of the art disclosed by the references cited and the objection made. Applicant must also show how the amendments avoid such references and objections. See 37 CFR §1.111(c).

15) Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAN X. DINH whose telephone number is (703) 308-4859. The examiner can normally be reached on Monday - Friday, 8:00AM - 5:30PM.

The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at (866) 217-9197 (toll-free).



**TAN DINH**  
**PRIMARY EXAMINER**

March 5, 2004